

of page 1 as follows:

-- BACKGROUND OF THE INVENTION --

Rewrite the paragraph beginning at line 3 of page 2 as follows:

-- This object is achieved according to the invention by the provision of a soundboard formed by a fibre coating of single-layer and at the same time multidirectional construction. --

Insert the following heading between lines 4 and 5 of page 2 as follows:

-- SUMMARY OF THE INVENTION --

Rewrite the paragraph beginning at line 1 of page 5 as follows:

-- The requirement for a single-layer and at the same time multidirectional fibre coating defines a layered fibre structure which in one single layer changes its fibre direction. In this case the fibres of individual fibre groups extend in the same direction, that is to say they are oriented as if "combed". Thus this is not a tangled fibre layer in which the fibres are likewise disposed multidirectionally; whereas in the tangled fibre coating the individual fibres are "mixed up together", that is to say disposed randomly, in the fibre coating according to the invention due to the "combed" arrangement as fibre groups the individual fibres form common linear fibre patterns. In contrast to the tangled fibre coating in which the individual fibres overlap at any angles, because of the "combed" fibre orientation in the fibre coating according to the invention possible overlaps predominantly

have small angles between individual fibres. --

Rewrite the paragraph beginning at line 5 of page 6  
as follows:

-- THE DRAWINGS

Preferred embodiments of the invention are shown in  
the accompanying drawings wherein:

Figures 1a, 1b, 2, and 3 are diagrammatic views  
illustrating a core plate on which coatings of fibres are  
applied; and

Figure 4 is an isometric view of a core plate  
sandwiched between multiple layers of fibre coatings.

DETAILED DESCRIPTION --

Rewrite the paragraph beginning at line 6 of page 6  
as follows:

-- The fibre coating according to the invention can  
basically be produced by various methods. One possibility is  
offered by the hand lay-up lamination of the core plate.  
Whilst this method only requires a small investment, it is  
very time-intensive for this and less reproducible than other  
methods. Therefore, an alternative method, namely the  
production of a so-called prepreg (pre-impregnated fibres)  
also is disclosed. A prepreg constitutes a semifinished  
product which is pre-impregnated with usually thermoplastic or  
thermosetting carrier material (matrix). It offers the  
advantage that the very complex operation of impregnation of  
the fibres with the matrix resin is carried out separately  
from the actual coating of the core plate. This operation is  
very important for the quality and the characteristics profile

of the subsequent composite fibre material and is carried out on a prepreg system under controlled and reproducible conditions [see Ehrenstein, G.W.: "Faserverbund-Kunststoffe", Munich-Vienna 1992]. Although textile layer structures and meshes of the most varied forms are offered as prepgs, they do not have the features of the invention. In the past multidirectional prepgs have always been built up as a crosswise mesh or as a combination of several unidirectional laminates. Thus they have a higher weight per unit area, which is disadvantageous in the manner referred to, than the multidirectional and at the same time single-layer fibre coating according to the invention. --

Rewrite the paragraph bridging pages 6 and 7, beginning at line 23 of page 6 as follows:

-- In individual cases, namely when the soundboard is used for musical instruments in which the static loading due to the string tension acting on them is such that part-zones of the soundboard are subjected to no or only very slight static loads, it is advantageous to reduce the vibrating mass of the soundboard in that no composite fibre coating is provided in these part-zones. Thus in this case only those part-zones of the core plate which are subjected to strong static loads are provided with the strengthening fibre coating. --

Rewrite the paragraph beginning at line 3 of page 7 as follows:

-- In the part-zones which are not coated with composite fibre material the physical properties of the

soundboard, particularly in the case of the preferred use of balsa wood as core plate material, are provided by the core plate itself. Furthermore, a thin layer of solid wood (preferably of spruce or maple wood) which takes up the total area of the soundboard preferably applied to each face of the core plate in order additionally to increase the total bending strength of the plate in the zones of the plate which are not provided with composite fibre material. Since particularly in the case of the preferred use of carbon fibres the fibre coating has a very high density, due to the partial coating, a considerable saving is made on the vibrating mass and thus the sound radiation of the soundboard according to the invention is substantially increased. --

Rewrite the paragraph beginning at line 13 of page 7  
as follows:

-- When the soundboard according to the invention is used for musical instruments in which the soundboard is subjected to strong static loads in part-zones (as the case with bowed stringed instruments for instance in the top plate zone below the fingerboard) it is provided that the multidirectional fibre coating is of multi-layer construction in the said part-zones which are subjected to strong static loading. The associated (and in fact unwanted) increase in the vibrating mass is compensated for by the feature of only partial composite fibre lamination of the core plate 1. --

Rewrite the paragraph bridging pages 7 and 8,  
beginning at line 21 of page 7 as follows:

-- The changes in direction 6 of the fibres 2 of the

A6  
multidirectional run of the fibres are shown in Figures 1 to 3. These changes in direction can be abrupt, as can be seen in Figure 1a. This is the case when the fibre coating takes the form of individual strips 3 or individual zones 4 which are separated from one another by gaps. In part-zones 5 the fibre coating is cut away so that the fibre coating 2 is provided only on at least one part-zone of the core plate 1. Fibre characteristics, such as thread fineness or thread thickness, are variable over the total area of the fibre coating (cf. in Figure 1a the differing fibres denoted by 7 in two zones). --

Rewrite the paragraph bridging pages 8 and 9,  
beginning at line 10 of page 8 as follows:

A7  
-- As an alternative to this, Figure 1b shows - using the example of a variant of the invention for use for bowed stringed instruments - the creation of the single-layer multidirectional fibre coating by individual differently oriented strips 3 (which are unidirectional in the illustrated embodiment) which, depending upon position, are designated by L1 to L6a and take up larger part-zones of the total area. The fibre coating of the upper face is designated by L1, L3 and L5 (solid lines) and that of the lower face is designated by L2, L4 and L6 (broken lines). The run of the fibres in the upper face differs from the run of the fibres of the lower face. This is the case in the illustrated embodiment with the fibre coating L1 and L2 (in the central zone between the lines A and B), whereas the run of the fibres in the edge zones (to the left of line A and to the right of line B) on the upper

face (L3 and L5) is identical to the run of the fibres on the lower face (l4 and L6). At the boundary edges A and B of the strip there is a change in the fibre direction 6: The central strips L1 and L2 (Between the lines A and B) show an angular deviation from the longitudinal direction of the soundboard, whilst the strips in the edge region L3 to L6 are oriented parallel to the longitudinal direction. In this way in the illustrated variant the multidirectional fibre coating is produced by the differing fibre orientation of the central zone and the edge zones. A "stopping" effect, i.e. a stiffening in the cross direction, is achieved in this case in the central part, and in fact is achieved not by the conventional crosswise layered construction of several laminates but by the deviation between the run of the fibres on the upper face and the run on the lower face of the core plate 1. The upper face and the lower face of the core plate are always provided in all zones only with one single-layer fibre coating. At the boundary edges of the differently oriented strips 3 or zones 4, overlaps due to production techniques are permitted and provided. As in the example according to Figure 1, part-zones 5 of the soundboard are also not covered with fibres in the variant according to Figure 1b.

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Rewrite the paragraph beginning at line 5 of page 9  
as follows:

-- The preferred embodiment does not have any abrupt changes of direction, but rather, as shown in Figures 1 and 3, it has continuous changes in direction 6. Not only in this

case but also in the case of the abrupt changes in direction of the fibres shown in Figure 1, the fibre zones are oriented as if they have been "combed", and thus the individual fibres form a common fibre pattern. In this case the fibre coating has different proportions of fibres per unit area, as is shown in Figure 3 by zones 8 of increased fibre density (proportion of fibres per unit area) and zones 9 of reduced fibre density.

As a result the mass coverage (mass per unit area) and physical properties can be better adapted to the loading directions and characteristic vibrational shapes of the soundboard than is the case with a constant fibre density. --

A1 Rewrite the paragraph beginning at line 15 of page 9  
as follows:

-- Due to the multiple changes in direction of the fibres a "stopping" effect is produced in such a way that a stiffening proportion of the fibre coating is also achieved transversely with respect to the longitudinal direction of the soundboard. This "stopping effect", which is illustrated in Figure 3 at a point for example through the run of the fibres (direction of the line 10) which deviates from the longitudinal direction (direction of the line 11) of the soundboard, is provided in the preferred embodiment of the soundboard. As a result the cross stiffness of the soundboard is increased deliberately on some zones. --

Rewrite the paragraph beginning at line 22 of page 9  
as follows:

-- Also in the embodiments with continuous changes in direction 6 (Figures 2 and 3) it may be advantageous that

the run of the fibres on the upper face deviates from the run of the fibres on the lower face of the core plate. --

Rewrite the paragraph bridging pages 9 and 10,  
beginning at line 25 of page 9 as follows:

-- In order when using carbon fibres, which are only slightly damped and therefore sound rather metallic, to produce a damping range of the characteristic vibrations which corresponds to the "warm" sound of wood, a preferred embodiment of the invention has at least one thin damping layer in at least one part-zone of the total area of the soundboard. A thin outer layer of solid wood, which by preparation or priming and varnishing contributes substantially thereto, is preferably additionally applied to each of the surfaces of the soundboard in order to produce the required damping values of the soundboard. The construction of a segment of the area of the preferred embodiment of the invention is shown in Figure 4: it consists of the core plate 1, multidirectional and at the same time single-layer fibre coating 2 (with zones of increased fibre density 8 and zones of reduced fibre density 9), as well as the damping layer 12 and the outer layer 13 of solid wood. In order to make the run of the fibres distinguishable, in Figures 1 to 4 the fibre density (proportion of fibres per unit area) is shown markedly smaller and the fibre diameter is shown markedly larger than is actually the case in the preferred embodiment of the invention. --

Rewrite the paragraph beginning at line 1 of page 11  
as follows: